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ORIGINAL ARTICLES.

A CASE OF PRONOUNCED INWARD AND DOWNWARD SQUINT IN NEAR VISION, WITH BINOCULAR FIXATION AND NORMAL MUSCLE-BALANCE IN DISTANT VISION.

BY SAMUEL THEOBALD, M. D.,

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Although I have for many years insisted upon the importance of testing the ocular muscle-balance for near as well as for distant vision, and have consistently practised what I preached, I do not recall an instance in which the results of such tests were as contradictory as in the case I am about to relate.

Miss S., a college student, 24 years of age, came to me for advice in January last. She was in a distinctly neurasthenic condition, and was suffering with severe and persistent headache and asthenopia, although she was wearing, constantly, glasses which had been prescribed for the correction of her pronounced ametropic fault.

A careful test of her refraction led me to a conclusion which differed little from the finding of the physician she had previously

*A paper read before the American Ophthalmological Society, June, 1906.

consulted, except that I made out a somewhat greater amount anisometropia.

The correction prescribed by me for distant vision was as follows:

L. eye — .50s ⌒ + 2.62c. 85°
R. eye + .62s ⌒ + 1.75c. 85°

The interest in the case centers in the unusual muscle-balance which the tests revealed with this correction, and, I may add, it was practically the same with the glasses she had previously worn.

By the vertical diplopia test there was:

Exophoria at 20' = 1½° to 0°
Esophoria at 12" = 8°

By the Maddox-rod test:

Right hyperphoria at 20' = ½° (scant)
Right hyperphoria at 12" = 6° to 7°

With Maddox's obtuse prism:

No hyperphoria at 20'

The ease with which the diplopia tests were made, coupled with the existence of normal distance muscle-balance, completely misled me as to the real state of affairs in near vision. I neither suspected, nor tested for, the actual squint at the reading distance which I afterwards discovered. In consequence, I concluded that the chief source of her trouble was the remarkable heterophoric condition which the near tests revealed. I, therefore, prescribd lenses for the correction of this, in short hook spectacle frames, to be worn over her distance glasses in reading, writing, etc.

No benefit resulted from this, and at a subsequent examination I discovered that instead of a pronounced heterophoric condition, as I had supposed, there was in near vision an actual inward and downward squint of the left eye, which was in no way modified by the prismatic glasses given her.

In view of the orthophoria present in distant vision no operative procedure seemed to me admissible. A slight modification was made in the lenses first prescribed; but, for some reason not apparent, my efforts to afford her relief were of little avail, and she was compelled to abandon her college work.

So far as could be learned, her symptoms—the severe headache, neurasthenia, etc.—could not be ascribed to any other cause than eye-strain.

ON THE COLLOID EXCRESCENCES AND THEIR INFLUENCE ON THE OSSIFICATION OF THE CHOROID.*

By Adolf Alt, M. D., St. Louis, Mo.

In a paper, entitled "On the Colloid Excrescences of the Lamina Vitrea as a Starting Point for the Formation of Bone," published in the Archives of Ophthalmology & Otology, vol. vi., p. 34, I described several specimens in which I was satisfied I had seen an undoubted formation of bone in colloid excrescences of the choroid. I had no explanation to offer as to "how this process took place, nor whether the colloid excrescences became ossified before or after other parts of the choroid." (l. c.) Having, however, observed the fact in a number of cases, I thought it important enough to be put on record and I ventured the opinion that such an ossification of colloid excrescences might be the starting point of bone formation inwards from the lamina vitrea of the choroid.

These statements were received with incredulity, since no cells which could form bone were present in the colloid excrescences and, furthermore, they have been misquoted in various ways. I have not taken up the study of this interesting question again, until I found that J. H. Parsons in the second volume of his excellent Pathology of the Eye, also, described ossification of colloid excrescences.

Acting on this stimulus I have again studied my numerous specimens of colloid excrescences and bone formation within and near the choroid and, while this study is not brought to an end as yet, I thought some of the points might be of interest to this society.

In searching for the first signs of the formation of colloid bodies, I found that near larger colloid bodies numerous pigments epithelial cells can be seen, which contain some smaller and some larger droplets of colloid substance in their protoplasm. These stain exactly like the larger excrescences. In transverse sections such cells appear enlarged, their pigment is pressed inward by the increased contents of the cell, and their nucleus, though it does not take up stains quite as well as in the norm,

*Read at the 11th annual meeting of the American Academy of Ophthalmology and Oto-Laryngology, at Oakland Hotel, Mich., Aug. 30th to Sept. 1st, 1906.

FIG. 1.

Shows two neighboring pigment epithelium cells undergoing a colloid metamorphosis. In one the nucleus, though but slightly stained, is plainly visible.

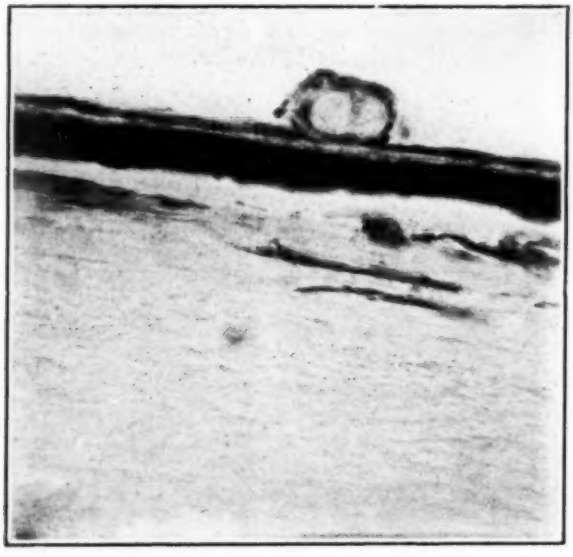

FIG. 2.

Two neighboring pigment epithelial cells in process of coalescence. The nuclei are almost invisible. Newly formed pigment epithelia cover these metamorphosed ones.

seems but little altered. Fig. 1. Gradually these cells swell more and more and two neighboring ones, at first still separated by a trace of pigment, will finally coalesce. Fig. 2. At this stage the nucleus takes up but very little staining material. The presence of these pathological cells seems in some way to produce a new-formation of pigment epithelial cells, which grow over the patnologic ones, and thus the smallest colloid bodies are covered with a continued layer of pigment epithelial cells.

Soon, however, even these cells may undergo a colloid change and when they coalesce with the underlying ones, larger colloid bodies result. Fig. 3. This process I have seen in chor-

FIG. 3.
More and more cells covering those originally affected are seen to undergo the same metamorphosis.

oids in which the lamina vitrea was still in existence, but, and that is a very important point, also, in a number of eyes in which I could find no trace of a lamina vitrea.

In this manner, by further and further addition of cells, undergoing the colloid metamorphosis, finally quite large colloid excrescences are formed, often large enough to be seen clinically with the ophthalmoscope and in sections with the naked eye.

A large number of sections showing the earliest and earlier stages of this process, which I have studied, would, therefore, tend to prove that probably the "transition theory," rather than the "deposition theory" of Parsons is correct. Pictures, however, are not wanting in which the cell structure and most of the pigment having disappeared, the remaining transparent colloid

FIG. 4.

The pigment epithelial cells are nearly all destroyed or have fallen off. Thus a picture results which looks as if the colloid excrescences were simply a thickening of the lamina vitrea.

substance appears simply as a swelling of the lamina vitrea. Fig. 4. But, it appears, that this is not a correct view and that such pictures, which, by the way, are rare, are rather a deception than the truth.

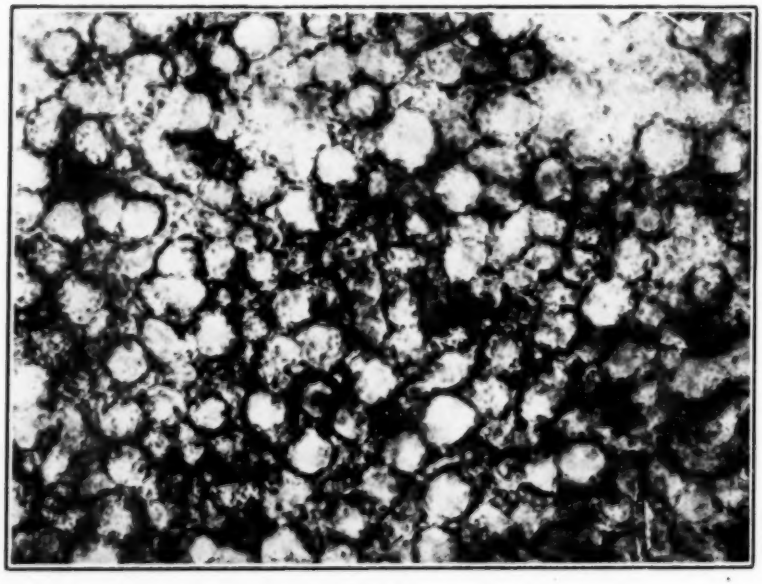

FIG. 5.

Choroid, of the injured eye of a boy 12 years of age, studded with colloid excrescences.

The process which I have described is the one usually found in eyes in which there is no violent inflammation and cell production going on, and the result seems to be a sometimes enormous quantity of colloid warts, so that the whole inner surface of the choroid may be studied with them. Fig. 5. Parsons states that cells may wander into these excrescences and there form bone, after the rupture of the underlying lamina vitrea. It does not seem probably that this statement can be doubted, and I think

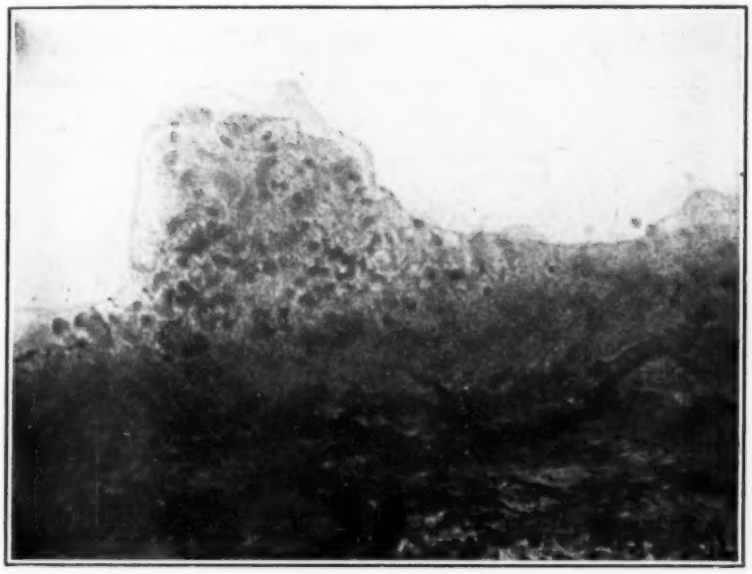

FIG. 6.
Shows the immigration of connective tissue cells into a colloid body while the latter is being formed.

probably the explanation of the cases I described some 30 years ago.

I have, however, found another explanation of the occasional formation of bone in colloid excrescences which is still more simple and, therefore, perhaps the more natural and frequent.

In eyes with a violent inflammation and cell production in the choroid, the lamina vitrea disappears so that often in many sections no trace of it can be found. When in such an eye

colloid excrescences are formed by the colloid metamorphosis of pigment epithelial cells and their coalescence numerous connective tissue cells are seen to wander into the colloid excrescences from the start, so to speak, while it is forming. Thus, such excrescences while surrounded with metamorphosing pigment epithelial cells, contain in their colloid substance numerous dying pigment epithelium nuclei and nuclei of connective tissue cells,

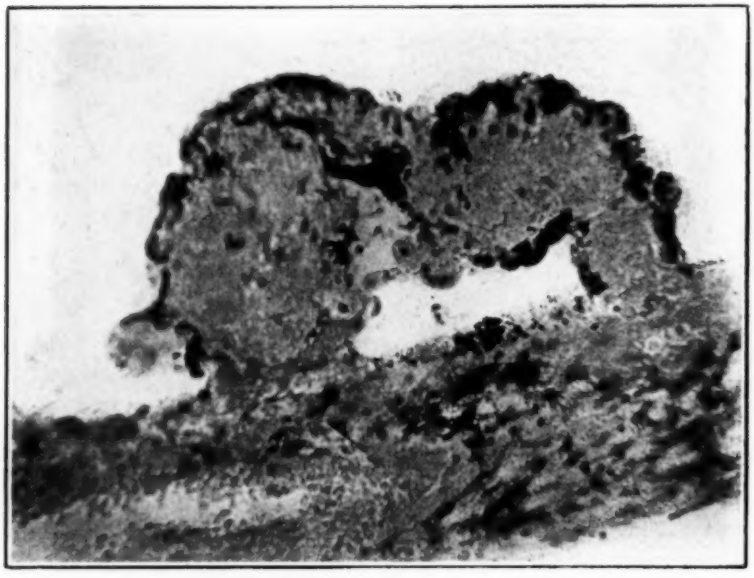

FIG. 7.
Two large colloid excrescences coalescing, numerous connective tissue cells can be seen lying within them.

which probably have the faculty of becoming osteoblasts. Figs. 6, 7, 8.

I have found such excrescences in which patches of osteid tissue could easily be distinguished, and it seems that in these excrescences, all substrata for a future bone formation, are furnished from their very beginning and no invasion of the finished colloid mass by cells at a later date in their existence, and after a rupture of the lamina vitrea need be assumed for the explana- a rupture of bone formation in these excrescences.

From the foregoing it seems that the ossification of colloid excrescences in one way or the other is proven. Whether, however, such ossified excrescences may form the starting point of bone formation on the inner side of the lamina vitrea or not, is not easy to decide. I am now rather inclined to doubt it. And, yet, I have some specimens in which on the partially preserved lamina vitrea a thick layer of osteoid tissue lies between two layers of pigment epithelium cells, with a break in the under-

FIG. 8.
A small plate of osteoid tissue in a colloid excrescence surrounded by connective tissue cells.

lying layer where the original colloid excrescence might be supposed to have been situated. Fig. 9. Such specimens seem to prove the possibility of larger plates of bone tissue springing from, or at least being formed in connection with ossified colloid excrescences.

I have purposely in this paper refrained from making any reference to numerous other points of interest connected with the colloid excrescences, most of which are well known and have been previously described by others and myself. Only one further statement I wish to add, that is, that while many eyes con-

taining colloid excrescences contain no bone, no eye with bone formation, in which the ossification was not too old and had not yet destroyed all other features, that I have examined, was devoid of colloid excrescences. Thus, it does seem, that there is a

FIG. 9.
A large plate of osteoid tissue between the original and a newly formed layer of pigment epithelium; the gap in the original layer may have been at the site of a former colloid excrescence.

certain relation between the two processes when the proper conditions exist in the eye.

The observations here recorded and illustrated by photographs made from the specimens, may, I hope be a step forward in the understanding of the manner in which these interesting phaenomena are brought about.

MEDICAL SOCIETIES.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

PRIESTLY SMITH, F.R.C.S., President, in the Chair.

Thursday, May 3rd, 1906.

RADIUM IN RODENT ULCER.

Mr. Mackenzie Davidson, in a paper on radium in the treatment of rodent ulcer, said that as a rule he found it unnecessary to apply the radium very frequently. In many cases cure had been effected with one or two applications, with several weeks' interval between them. The activity of different specimens of radium varied, but it was possible by means of an electroscope to measure this. He preferred to use radium encased in a sealed glass tube, for the glass shut off some of the rays which would burn the skin and were of no use for destroying the rodent cells. The power of radium was for practical purposes a fixed quantity in any one specimen, so that the dose given was known absolutely; in this way it differed considerably from the power of x-rays, which was not constant, but depended upon a variety of circumstances.

IMPLANTATION CYSTS.

Mr. Ransom Pickard (Exeter) described a case of implantation cyst containing wood fibres in a girl aged 14. The tumor, which had been noticed for nine years, was 3 mm. in diameter, and situated below the pupil. On removal, its base was found to be composed of granulation tissue containing three wood fibres of coniferous origin. The tumor consisted of epithelial cells, and contained several cysts, some of which were formed by degeneration of the cells and others by the formation of fissures. There was no history of injury to the eye, and the cornea was quite normal, but there was a possibility that it had been perforated ten years ago by a fine splinter, for at that time she fell and struck her nose against a table.

Cyst of the Orbit.

Messrs. Treacher Collins and Johnson Taylor (Norwich) described a case in which there was a cystic swelling occupying the position of the left eye, and apparently mainly formed by a bulging forward of the conjunctiva of the upper lid. It was present at birth, and had steadily increased since. Mr. Johnson Taylor first saw the child when 3 weeks old. He then tapped the cyst with a fine trocar and cannula: it refilled the following day. When next seen about a year later it had increased considerably in size in all dimensions; it stood out 2½ inches from the orbital rim, and caused a most unsightly appearance. Blood and discharge had also been exuding from it for two months. Having removed it, Mr. Johnson Taylor handed it over to Mr. Treacher Collins for examination. The examination showed that the cyst was due to an enormous distension of the whole globe, the sclerotic forming its outer wall. Its formation was apparently due to the imperfect involution of the primary optic vesicle which forms the secondary optic vesicle.

Thursday, June 14th, 1906.

Congenital Cataract.

Mr. Nettleship and Mr. Monteith Ogilvie gave an account, with diagram and drawings, of a family in which twenty persons in four generations had a peculiar variety of partial congenital stationary cataract in the form of a perfectly circular, well defined, homogeneous or finely granular layer, of no great density, situated between nucleus and posterior pole, about 4 mm. in size. At first sight it might be taken for a small lamellar cataract, but the invariable absence of any trace of a second layer and the certainty that the opacity lay behind the nucleus negatived that diagnosis, whilst there was equally good evidence that it lay in front of the posterior pole. Some of the cases were first seen by Mr. Doyne at Oxford several years ago. These were re-examined by Mr. Ogilvie, and were found to be unaltered, and he has recently discovered a large number of new cases. The change caused but little loss of visual acuity, and only a slight desire to shade the eyes against bright light; hence the number of cases could only be determined by ophthalmoscopic examination of every accessible member of the family. Mr. Ogilvie examined about 150 persons, whilst one group living at Edin-

burgh was examined for the writers by Mr. G. Mackay. All the cases occurred in one branch of the family tree.

NON-MAGNETIC STEEL ALLOYS.

Mr. SIMEON SNELL (Sheffield) in a paper on "Steel Alloys which are not Magnetic," said that during recent years, steel alloys had been used in certain industries, and that these alloys had altogether different magnetic properties to ordinary iron or steel. Manganese steel which contained 12 per cent of manganese, 87 per cent of iron, and 1 per cent of carbon, formed a very hard steel, which was difficult to machine. But the point of interest was that it was non-magnetic. Its toughness made it useful for many purposes. Nickel and iron was another alloy, and this was as susceptible to magnetism as pure iron, but the admixture of a small percentage of manganese and carbon completely altered the magnetic properties. Thus a mixture of carbon 0.4 per cent, nickel 20 per cent, and manganese 0.9 per cent with iron was absolutely non-magnetic. Another point was that if this same alloy were quenched in liquid air it became magnetic. Another alloy was chromium steel. It was magnetic, but less so than ordinary steel. Specimens of these were exhibited, and their magnetic peculiarities were demonstrated. He remarked that fortunately the vast bulk of all steel splinters penetrating the eyeball came from steel which was magnetic, and therefore the use of the electro-magnet was unaffected. The possibility of steel being non-magnetic should be borne in mind, and inquiries made as to the particular kind of steel from which the fragment injuring the eye became detached. In conclusion the author referred to other alloys which were highly magnetic. He had not, however, yet found that they were more magnetic than the soft iron in use had been.

MILIARY TUBERCULOSIS.

Messrs. L. V. CARGILL and S. MAYOU described the case of a man, aged 21, who had miliary tuberculosis, and tubercle of the choroid with implication of one optic disc. He was admitted to King's College Hospital in December, 1905. Although previously healthy, he had been feeling unwell for six weeks, and was supposed to be suffering from influenza. He perspired a good deal, was feverish, and was losing weight. There were no physical signs in the lungs, and no tubercle was found in the expectoration

or blood. The opsonic index to tubercle was 1. Two weeks later an irregular yellowish-white patch was found in the right eye near the disc; it was only slightly elevated, and there was no pigment. In the left eye there were signs of optic neuritis. The irregular pyrexia continued, and signs developed in the lungs. On February 17th tubercle bacilli were first found in the sputum, and death occurred three days later. The *post-mortem* examination showed that the meninges were studded with tubercle; so also were the lungs and most of the abdominal viscera. The sections of the eye showed a typical tuberculous mass situated at the edge of the choroid on the outer side of the optic nerce; this mass involved the nerve, and spread backwards through the lamina cribrosa. The anterior part of the globe was normal except for a congenital anterior synechia.

Friday, July 13th, 1906.

CONGENITAL DISTICHIASIS.

Mr. A. R. BRAILEY read a paper on this subject, and gave a clinical description of a case, together with the result obtained by making a microscopical examination of a small portion of the lid. The chief point of interest was the fact that the Meibomian glands were apparently completely absent and their place was taken by hair follicles. He then gave a description of four other cases seen in the clinic of Professor Fuchs in Vienna. These were the only cases seen there during a period of twenty years, and showed how rare this deformity was. He also described a case reported by Kuhnt. He drew attention to the distinction which should be recognized between trichiasis and distichiasis, and urged the advisability of limiting the latter term to the congenital cases. He gave a list of other cases which had been reported.

THE CHOROID AT THE MACULAR REGION.

Dr. C. H. USHER (Aberdeen) read a note on the choroid at the macular region. He drew attention to the fact that in sections of the eyes of albinos examined by Mr. Nettleship, and shown at a meeting of the Society in November last, pigment was present in the choroid, but limited to the yellow spot region. He had since examined 11 normally pigmented eyes, and had found, (1) a deeper pigmentation of the retinal epithelium at the yellow spot region and an increased thickness of this layer, (2) a marked in-

crease of the pigmentation of the choroid, and (3) an increase in the thickness of the choroid. From the above observations it might be expected that if pigment were present at all in an albino's eye, it would be found in the macular region.

WHITE EYELASHES.

Dr. USHER also read a paper on a case of unilateral white eyelashes and tufts of hair. The patient was a girl aged 3 years whose eyelashes on the left side were quite white, and she also had two tufts of white hair on the left side of her head. There was nothing else abnormal in the mother or child, and the pregnancy was normal in every way. The condition was first noticed about the third day after birth. All the eyelashes on the right side were light brown in color, so also was the greater part of the hair of the head. The family history was carefully investigated, and, although there were some albinos in the family, yet no other member seems to have had this peculiar condition.

PAMPHLETS RECEIVED.

On Intraocular Irrigation. By J. A. Lippincott, M. D.

Vernal Conjunctivitis in the Negro. By D. Roy, M. D.

Removal of the Lens in Myopia. By J. L. Barnes, M. D.

The Teaching of Specialties in Medicine. By Ch. A. Oliver, M. D.

Bacteriological Type of Acute Conjunctivitis. By A. Duane, M. D.

The Universal Method of Clinical Writing by Means of Clinography. By V. Vensuti, M. D.

Iritis Tuberculosa as Diagnosed and Treated by Koch's Tuberculine. By W. E. Gamble, M. D., and E. V. L. Brown, M. D.

Dell' ectropion uveal congenitum e dei cosidetti flocculi papillari con speciall regardo al loro rapporto col sinus anularis di Szili. By Prof. Dr. C. Gallenga.

SEVENTY-FOURTH MEETING OF THE BRITISH MEDICAL ASSOCIATION, HELD AT TORONTO CANADA, AUGUST 21st TO 25th, 1906.

SECTION OF OPHTHALMOLOGY.

Tuesday, August 21st, 1904.

This Section, which was very well attended, was opened by a short prefatory address by the President, Mr. Marcus Gunn, in which he welcomed all present, and dwelt with regret on the severe loss sustained by opthalmic science in the death of Dr. Buller, of Montreal. Mr. Lawford then opened the discussion upon rare forms of choroiditis. His desire was to elicit opinions, especially as to the etiology of some forms of choroidal disease, rare in his experience, which he proposed to bring before the meeting. He grouped his remarks around three classes of cases; the first ,a class closely resembling syphilitic disseminated choroiditis; the second, a series to which the term "localized exudative choroiditis" might be applied; and the third, a class of cases which might be called "family choroiditis." Mr. Hill Griffith drew attention to three rare forms of choroiditis, one of which he termed "choroiditis with descemetitis," and the other a form of plastic localized exudation; the third variety was that commonly known as coloboma of the macula. Mr. Stedman Bull (New York) had seen a number of cases of localized choroiditis, non-syphilitic in origin, and always situated near the optic disc or macula. Mr. Arnold Lawson quoted two cases, one resemblng the condition described by Mr. Hill Griffith as choroiditis with descemetitis, and the other a case of bilated choroidal degeneration the result of diminished vitality due to chronic dyspepsia and severe pyorrhoea alveolaris. This case improved greatly upon removal of the teeth and the substitution of a good false set. Dr. Risley (Philadelphia) drew attention to choroiditis the result of disease of one of the bony sinuses of the skull, and related the history of a case. He also thought that prolonged eyestrain might be a causative factor in some cases of choroiditis. Dr. Webster Fox (Philadelphia) narrated a rare case of choroiditis which seemed to follow an outbreak of cholesterine crystal formation in and about the macula. Dr. Verhoeff (Boston) read a paper upon obstruction of the central retinal vein, with lantern demonstration of cases. He gave the results of anatomical examination of six cases. Dr. Casey Wood (Chicago) read a paper on some recent cases of death and blindness from

wood-alcohol poisoning. This paper possessed special features of interest for Englishmen, as the disease is practically unknown in England. Dr. Killen read a short paper upon the irrigating apparatus of the late Dr. McKeown for the removal of unripe cataract, and described its practical application. The business of the morning was concluded by a paper by Mr. Freeland Fergus upon binocular vision.

Wednesday, August 22nd.

The meeting was again very well attended, and over a hundred members were at one time present. The morning was largely occupied by a discussion upon sympathetic ophthalmitis, which was introduced by Dr. Burnham (Toronto), who confined himself to the treatment of the eye sympathetically inflamed and the transmission of the disease from one eye to the other. He advocated treatment by the combined method during the quiescent period before the onset of inflammatory symptoms. Mr. Arnold Lawson, who followd, discussed the question from the point of view of preventive treatment. He advocated the formation of a committee to inquire into and collect evidence on the points raised, and summarized the matter in the form of five practical questions. Dr. Stirling (Montreal) then gave a brief outline of the disease from a pathological standpoint, and pointed out that definite progress had been made in the course of the last twelve months in the matter of assigning a specific origin to the disease. Dr. Theobald (Baltimore) held that distension and tortuosity of the retinal vessels, especially of those below the disc, was a premonitory sign of inflammation beginning at the posterior pole of the sympathizing eye, and that a similar condition of the lower subconjunctival vessels heralded inflammation of the anterior segment of the globe. Dr. Weeks (New York) spoke of the condition of the uveal tract in cases of sympathetic ophthalmitis occurring many years after the initial lesion. Dr. Verhoeff (Boston) thought that recent infection of the scar by micro-organisms furnished a possible explanation of cases in which the disease arose after a quiescent period of many years. Dr. Connor (Detroit) advocated treatment by saturating the patient with large doses of sodium salicylate. Dr. Colin Campbell (Toronto) believed in the theory advanced by Dr. Verhoeff. He cited a case in which the disease followed a chronic marginal ulceration of the cornea without any perforating wound. Dr. Albert Baker (Cleveland) narrated a case in which the disease followed

a pyogenic infection of a cataract wound induced possibly by his assistant having been in recent attendance upon several cases of erysipelas. Dr. Risley (Philadelphia) had noted that in cases of true sympathetic irritation the symptoms often seemed to have a definite relation to strain upon the ciliary muscle of the injured eye. Dr. Gordon Byers (Montreal) narrated a case of sympathetic disease following upon Mules' operation. The symptoms arose a fortnight after operation and one month after injury. Dr. E. L. Jones (Cumberland) drew attention to the efficacy of subconjunctival injections of corrosive sublimate (1 in 3,000) in normal salt solution, 30 minims being used for an injection. Dr. Freeland Fergus read an interesting paper upon sympathetic degeneration characterized especially by a concentric contraction of the field vision. The condition was unaccompanied by any obvious inflammation of the eye, and, although the loss of vision was sometimes considerable, yet it never led to blindness. The contraction of the field remained permanent. Dr. Jackson (Denver) read a paper upon accommodation after middle life, and pointed out that there was often a great difference in the accommodative power of elderly people at any particular age.

The American Academy of Ophthalmology and Oto-Laryngology held its eleventh annual meeting at the Oakland Hotel, St. Clair, Michigan, on August 30th and 31st. The meeting, which was throughout enjoyable and successful, was made especially so by Mr. Marcus Gunn's address on "Affections of the Optic Nerve."

The officers elected for the ensuing year are:

President, Dr. J. A. Stucky, Lexington, Ky.

First Vice-President, Dr. R. A. Reeve, Toronto, Canada.

Second Vice-President, Dr. Robert Levy, Denver, Colorado.

Third Vice-President, Dr. Eugene Smith, Detroit, Mich.

Secretary, Dr. George F. Suker, Chicago, Ill.

Treasurer, Dr. Otto J. Stein, Chicago, Ill.

Members of the Council: Dr. J. A. Stucky, Lexington, Ky.; Dr. W. L. Ballenger, Chicago, Ill.; Dr. Casey A. Wood, Chicago, Ill.; Dr. Edward Jackson, Denver, Colo.; Dr. Adolf Alt, St. Louis, Mo.; Dr. Alvin A. Hubbell, Buffalo, N. Y.; Dr. Hanau W. Loeb, St. Louis, Mo.

ABSTRACTS FROM MEDICAL LITERATURE.

By W. A. Shoemaker, M. D.
ST. LOUIS, MO.

A CASE OF VESICULAR KERATITIS WITH A FILAMENTOUS FORMATION OF THE DETACHED EPITHELIUM.

Burton Chance (N. Y. Med. Jr., Aug. 18, 1906) reports a case which he believes "to be one of neuropathic disease of the cornea, associated with a lithæmic or rheumatic diathesis." The patient, a young Irish woman, was suddenly attacked with a severe pain in her right eye, and thought she must have injured it in some way, but did not know how. Several days later she presented herself for treatment, when the cornea was found denuded of epithelium over the greater part of its surface. The epithelium did not restore itself for some days, and when it began to do so, numerous small vesicles appeared over the surface of the cornea. After one or two days these burst and the epithelium remaining attached by a pedicle, was rolled into filaments by the action of the lids over the globe. Several crops of these vesicles appeared, but at no time was the corneal substance proper infected.

The filaments were composed of degenerated epithelial cells. Different lines of treatment were unsuccessful until an application of pure tincture of iodine was made, following the removal of all the filaments, when the case improved steadily and was discharged with a smooth, transparent cornea and $^{5}/_{75}$ vision.

THE VALUE OF X-RAYS IN OCULAR THERAPEUTICS.

G. Oram Ring (Jr. A. M. A., Sept. 29, 1906), reviewing the results of X-Ray treatment as applied to different branches of ophthalmology, gives some of the experiences and results obtained by a large number of ophthalmic surgeons, both in this country and abroad, in the treatment of various diseased conditions of the eye and its adnexa by this agent, and offers the following conclusions:

1. X-Ray therapy marks a great advance in the treatment of superficial epithelioma and rodent ulcer of the eyelids, and can usually be relied on to effect a cure.

2. If unsuccessful, then electro-chemical sterilization may be utilized, or finally excission with or without plastic operation.

3. X-Ray treatment has proven of value in the more extensive orbital carcinomata, but it is conceded that the deeper the growth the less favorable will be the result.

4. A sufficient number of cures of sarcoma of lids and orbit have been reported to warrant its exhaustive trial in all types of this disease. More radical operative procedures with subsequent ray applications being indicated in event of primary failure.

5. X-Ray treatments usually exert an anodyne influence on malignant disease of the eyelids and orbit, but are occasionally reported to cause exacerbations of pain.

6. Noteworthy progress in the treatment of trachoma has been effected by the utilization of X-Ray therapy. It should invariably be utilized if ordinary methods fail.

7. The weight of evidence indicates the positive value of X-Ray treatment of vernal conjunctivitis.

8. There is evidence which points to the value of X-Ray therapy in chronic conjunctivitis (Kassabian), scleritis, episcleritis (Pardo), traumatic uveitis (Jackson), conjunctival tuberculosis (Stevenson), corneal ulceration (Deunett), glioma (Hilgartner and Würdemann), and gummata (Parker).

9. It is believed that the rays will cure malignant disease involving the cornea and conjunctiva, provided treatment is applied sufficiently early.

10. The treatment of congenital nevi by the rays is likely to prove effective and should be exhausted before electrolysis or radical operation is considered.

11. Further testimony must be accumulated before an authoritative statement is possible of the effect of X-Rays in painful types of iridocyclitis and glaucoma and other ocular diseases.

INCURABLE EYESTRAIN.

George M. Gould (Jr. A. M. A., Sept. 18, 1905), defines eyestrain "as the local reflex, or general results of ocular efforts caused by congenital or acquired defects or weaknesses of the optical or sensation-making mechanisms of the eyes, by over-

use of normal eyes, by injurious occupation, etc., or by diseases of other organs, which interfere with ocular function." He considers the eyestrain incurable when the abnormal condition which causes it cannot be removed, and thinks it very important that the reasons why it is incurable in an individual should be recognized in order that the patient may be assisted to shape his future life and actions so as to lessen as much as possible his suffering and the dangers to which he might be exposed, and also that he may be spared the trouble and expense of seeking from other sources that relief, which cannot be found.

He makes the following classification of the causes of eyestrain, which cannot be removed or neutralized:

1. Congenital anomalies.
2. High degrees of ametropia.
3. The sequelae of inflammatory diseases, traumatism, etc.
4. Amblyopia, or other injury of ametropia.
5. Chronic heterophoria or heterotropia.
6. Interruptions or contraindications of the normal coördinations of dextrocularity and dextromanuality.
7. Cerebral or neural disease.
8. Systemic disease, or diseases of interrelated special organs.
9. Injurious occupations, unhygienic use of the eyes, etc.

Among the congenital anomalies which may cause eyestrain, Gould mentions microphthalmus, cataracts, peripherally located pupil, malformations and malpositions of the lenses, persistent hyaloid artery, pupillary membrane, enophthalmus; but he thinks albinism, and colobomas, especially of the iris, are the two most important and most frequent.

Opacities of the cornea are a prolific cause of eyestrain. Gould thinks that more care should be exercised in refracting these eyes in order that at least some of the strain might be prevented, and also to keep the eye in use.

Conical cornea; adherent irises, due to untreated or badly treated iritis; iridodialyses, causing double pupil; old cicatrices in or near the cornea causing irregular astigmatism; ;and improper operations on the eyes, all may cause incurable eyestrain, as may also ametropic choroid oretinitis and vitreous opacities.

He thinks many cases of amblyopia can be cured by careful refraction, and one can never tell how much an amblyopic eye may improve when placed under the most favorably circumstances. The eyestrain caused by amblyopia is generally due to the use of the eyes for near work. Gould says: "Only the best

conscience and the most expert intellect may rightly decide when to persist in stimulating or coaxing an amblyopic eye into use, and when to exclude it."

Heterophoria, he thinks, is the result of errors of refraction and innervation and cannot be cured by operation. Most cases can be relieved or cured if proper glasses are worn, especially in the young.

Paralysis of accommodation may cause eyestrain, which even bifocal lenses will not cure. Myosis and slight nystagmus may also cause symptoms which cannot be relieved. While the diplopia of paralytic strasbismus is not generally thought of as eyestrain, yet it may be considered such and is generally very annoying, and often can be relieved only by excluding the one eye by a steamed or ground glass. Tremor of the head may be the cause of eyestrain, and Gould has had one case where a rapid and constant tremor of the hands caused eyestrain in reading, which could not be relieved until her paper or book was placed against a solid wall or book-rest, which stopped the rapid movements and relieved the symptoms.

Much eyestrain due to unhygienic occupation, use or abuse of the eyes can be prevented, but their still exists among employers, especially railroad officials, a prejudice against wearing glasses which prevents their employe's getting relief.

TREATMENT OF PROGRESSIVE ATROPHY OF THE OPTIC NERVE DUE TO ACQUIRED SYPHILIS.

Charles Stedman Bull (Jr. A. M. A., Sept. 15, 1906) reports a series of twenty-five cases of simple progressive atrophy of the optic nerve, due to constitutional syphilis, treated by posterior subconjunctival and intravaginal injections of sublimate of mercury. The cases had all taken a thorough course of antisyphilitic treatment previously under skilled syphilologists, and tabes and disseminated sclerosis were excluded as far as was possible.

His conclusions are:

1. "Posterior subconjunctival injections of sublimate may be given with but little pain if the sublimate injection is preceded by the injection of cocain.

2. The conjunctiva should be incised and carefully separated from the episcleral tissue and the injection made far back toward the apex of the orbit.

3. The eye need not be bandaged after the injection, but

cold applications should be made for half an hour.

4. This method of treatment of cases of atrophy of the optic nerve has, in my hands, proved of no more value than the usual routine treatment by mercury, potassium iodid and strychnia, and offers no encouragement for its continued use."

A STUDY OF CONVERGENCE AND ITS DEFECTS.

Wendell Reber (Jr. A. M. A., Sept. 1, 1906), from a study of convergence and its defects which includes an analysis of four hundred and forty-one cases of exophoria treated in private practice, offers the following conclusions:

1. Exophoria, as a symptom-producing quantity, has come to the point where it must be viewed as an atavistic phenomenon —a reversion to a lower type—a stigma of degeneration, if some one wishes to insist on it. (I do not hesitate to use the latter designation, as I am myself an exophoric.)

2. All the advantages of binocular stereoscopic vision are conditioned on convergence only.

3. Convergence, as it is daily dealt with, may be said to be composed mainly of two elements—the initial or tonic convergence, and the accommodation convergence.

4. The amplitude of convergence ought to be always calculated.

5. The average patient has somewhere between 10 and 11 meter angles of convergence.

6. The reserve amount of convergence ought to be about twice as great as the convergence required by the work.

7. The cover test is the most reliable test for study of the position and behavior of the eyes when fixed on an object at twenty feet.

8. When converted into the parallex test much added delicacy is secured.

9. The maddox rod and a small electric light are much superior, as a test for the muscle balance at the reading distance, to the vertical diplopia test.

10. Nine-tenths of all cases of exophoria will be encountered in patients over 20 years of age.

11. The frequency of exophoria in the male and female is about equal.

12. Exophoria for infinity generally means deficiency either in the amount of convergence, or in the faculty of using it.

13. Low degree exophorias are the most common and the most symptom-producing.

14. The average degree of exophoria is least in H + Ah conditions, rises through the M +Am conditions, and is highest in antimetropia.

15. Exophoria assumes three principal forms, i. e., (a) asthenic exophoria (convergence insufficiency), (b) anatomic exophoria (sthenic exophoria), (c) neurasthenic exophoria.

16. About 50 per cent. of exophorias are of the sthenic or anatomic variety.

17. The test of the muscle balance at the reading distance is no measure of the total converging power of the patient and must be supplemented by tests for the convergence near point.

18. The prism convergence is only of relation value as a working indication.

19. The relation of 3 to 1 as between prism convergence and divergence will not nearly hold in exophoria.

20. The influence of hyperphoria in often reducing the power of both divergence and convergence is well known, and no case of functional divergence should be put down as a pure exorphia until hyperphoria of three-quarters of a degree or more has been excluded.

21. In hyperexophoria the use of suitable vertical prisms, with convergence training, will frequently do away with all of the patient's symptoms.

22. The symptoms of exophoria do not differ materially from those of other forms of eyestrain.

23. The treatment of exophoria should comprise (in the following order): (a) right living; (b) careful refraction; (c) convergence training; (d) prisms (base in) for infinity: (e) prisms base in for the reading glasses only (f) tenotomy or advancement.

PARAFFIN PLATES AS AN AID IN OPERATIONS FOR EXTENSIVE SYMBLEPHARON AND FOR THE RESTORATION OF CUL-DE-SACS FOR PROTHESIS.

William H. Wilder (Jr. A. M. A., Aug. 25, 1906), after referring to the failure that generally followed attempts to relieve symblepharon by operative procedures in by-gone days, notes the successful results of more recent operators along this line, notably Weeks, Hotz, and Woodruff, and speaks of the methods pursued by them. He then describes the technic of his own operation, a modification of Hotz and Woodruff methods by coating

the materials they use for plates with paraffin. This is done by dipping the plate, after it has been fashioned, into melted paraffin, which must have a melting point not lower than 130° Fah., and then placing it in cold water. This forms a thin coat of paraffin over the plate which is perfectly smooth and even. It can be dipped as often as desirable, thus making the necessary thickness of the paraffin. He cuts a central hole in his plate for the cornea where the globe is present, or several holes through which the sac can be cleansed where the globe is absent. He concludes his article thus:

"The advantage of a plate for holding mucous or Thiersch grafts in place in the fornix of the eyelids is obvious. The advantage of the paraffin plate is that it can do no harm to the cornea. It can be built up as required to fit any conjunctival cul-de-sac that has to be lined with a Thiersch graft. The graft adheres to the paraffin, so that it can be evenly smoothed out on it, and thus perfect coaptation is secured between the graft and the raw surface of the cul-de-sac. To accomplish this the graft should be thin and large enough to cover all raw surface, no sutures being required. With perfect coaptation the graft will have secured a firm hold at the end of forty-eight hours and the plate can be removed for cleansing the eye. In the case of restoration of the socket for prothesis, it may be left in place for considerable time for the sac can be cleansed by irrigation through the holes in the plate. If it is so large that there is difficulty in removing it, it can be cut in two and the subsequent treatment continued with a plate that can be more easily inserted."

ASTIGMATISM, A CAUSE OF VOMITING IN SCHOOL CHILDREN.

Aaron Brav (N. Y. Med Jr., Aug. 26, 1905) says that in cases of vomiting in school children, preceded by dizziness, headache and visual disturbances, and unaccompanied by pain or distress in the epigastrium, regurgitation of food, or by fever and chills, the physician may safely make a diagnosis of astigmatism, and should refer the case to an ophthalmologist for refraction.

In other forms of ametropia, if the letters are seen they are plain, and when the child can not see them he gives up trying and rests the eyes; but with astigmatism, he can see nearly all the letters, which are blurred and indistinct, however; and the confusion which this causes disturbs his equilibrium (especially if it be a weakly, neurotic child), dizziness and vomiting following.

In these cases all kinds of treatment fail unless the child is taken out of school or has the astigmatism corrected by proper lenses.

Exceptions to the rule that these symptoms are caused by astigmatism, are those cases of unbalance of the extra-ocular muscles and cases due to some form of toxemia, particularly of nephritic origin. Hence in dealing with this class of cases a careful analysis should always be made to exclude the latter condition as a cause of the trouble.

SILVER SALTS IN OCURAR THERAPEUTICS.

George F. Libby (Colorado Medicine, Oct., 1905) recommends the use of the newer silver salts in the treatment of catarrhal and purulent conjunctivitis, dacryocystitis, ulcers of the cornea, and trachoma, as well as in the preparation of the eye for operation. He believes that in purulent conjunctivitis the advantage of these salts over solutions of nitrate of silver is not that they are more penetrating, but less irritating than the latter, and thinks that as a preventive of ophthalmia monatorum, protargol in 20 per cent solution and argyrol in 25 per cent solution may safely be substituted for the regulation 2 per cent solution of silver nitrate, being quite as efficient and much less irritating.

His preference is protargol in cases of ophthalmia of the new born and argyrol in cases of gonorrhoeal ophthalmia of the adult, using protargol in either case, however, where the cornea is involved. In dacryocystitis a 2 to 4 per cent solution of protargol is very serviceable, while in corneal ulcer he recommends 25 to 50 per cent solutions of argyrol. Either argyrol or protargol is useful in preparing the eye for operations, using it repeatedly for several days previous to time of operating.

He acknowledges the great value of nitrate of silver, when properly used, but claims that when improperly used it may do great harm. The newer salts, in most cases, are quite as useful, and little or no harm can be done with them by not using them properly.

THE OCULAR SYMPTOMS OF AFFECTIONS OF THE ACCESSORY SINUSES OF THE NOSE.

William Campbell Posey (Jour. Am. Med. Assn., Sept. 9, 1905) believes that diseases of the accessory sinuses of the nose are a very fruitful source of eye troubles, and that the ophthalmologist should seek the aid of the rhinologist in cases pointing to affections of this kind. Disturbances of vision and the visual field, exophthalmus, affections of the lids, conjunctiva, cornea, and

uveal tract, cataracts, changes of refraction, asthenopia, headache and neuralgia, all may have their origin in some disease of these sinuses. He suggests differential diagnosis of the sinuses involved by the character and location of the pain.

TREATMENT OF OPHTHALMIA NEONATORUM.

Eugene Smith (Jr. Mich. State Med. Society, Oct., 1905) is opposed to the use of cold applications, and to frequent cleansing of the eyes by irrigation or wiping the secretion from the separated lids in ophthalmia neonatorum.

Infants do not bear long continued use of cold well, so that it is best not to use these applications; and he contends that rest of the inflamed tissues is as important in this disease as in other cases. This they do not get when every fifteen to thirty minutes the lids are separated and washed or wiped. His treatment is to keep the edges and surface of the lids annointed well with some bland ointment, thus preventing the lids from becoming glued together by the secretion drying on them, and avoiding the retention of the irritating discharge in the conjunctival sac. Once daily a 1 or 2 per cent solution of silver nitrate is applied to the conjunctiva of the everted lids, or what is more often used now is a fifty per cent solution of argyrol, dropped into the conjunctival sac two or three times daily. Before using this solution he gently massages the upper lid, thus assisting in the removal of the discharge.

SUPPURATIVE METASTATIC TENONITIS.

R. Jocqs, Paris (Cron. Med. Quir. de La Habana, June, 1905, No. 12) records a case where suppurative tenonitis developed in a patient having an enlarged prostate, with vesical complications, and mentions the fact that metastasis frequently occurs in diseases of the genito-urinary tract, particularly in women at the menopause. He says this condition is to be differentiated from iridochoroiditis, with which it is sometimes associated, and also from orbital cellulitis and abscess. The absence of much pain, even with pronounced swelling of the conjunctiva and lids, points toward this condition. It not only occurs in diseases of the genito-urinary tract, but may be a complication of typhoid fever, influenza and the eruptive fevers, and should be thought of in cases of exophthalmus with chemosis and oedema of the lids which occurs during the course of any of these diseases.

The prognosis is good, provided no uveitis is associated with it.

SOME OBSERVATIONS CONCERNING A SPECIAL REFLEX CONDITION WHICH SUPERVENES AFTER THE OPERATION FOR CATARACT.

R. de Obarrio (Ann. de Opt., Mexico, April, 1905 records four cases in which, after uncomplicated operation for cataract, a conjunctival hyperaemia occurred and persisted until carious roots of teeth in the upper jaw of the side on which the operation had been done on the eye had been extracted. The removal of these was promptly followed by a disappearance of the ocular symptoms. He now makes a routine examination of the mouth, nose, and throat before operating, and has removed any such source of irritation.

TWO CASES OF APHASIA COMPLICATING OPHTHALMIC MIGRAIN, CONSECUTIVE TO ERRORS OF REFRACTION.

Jose de Jesus Gonzales (Ann. de Opt., Mexico, July, 1905) reports two cases of aphasia, occurring in persons with no other neuropathic history. They had repeated attacks until a moderate compound myopic astigmatism was corrected, after which no more occurred.

SYMPATHETIC INFLAMMATION FOLLOWING PAN-OPHTHALMITIS.

W. Zentmayer (Jr. A. M. A., Aug. 19, 1905) analyzes fifteen cases he has found recorded where sympathetic inflammation followed a panophthalmitis of the other eye, although, until in the recent past it has been thought that such result would not occur. He reports a case of his own observation, in which the microscopic appearances of the exciting eye were not unlike those of other exciting eyes. He believes that after a severe panophthalmitis there is little danger, but after cases of a mild type, he recommends enucleation, the eye being a dangerous one. It is suggested that perhaps the original injury producing the panophthalmitis may be the real exciting cause.

DYNAMIC (SPASTIC) ASTIGMATISM.

F. B. Eaton (Jr. A. M. A., Aug. 26, 1905) believes that this condition frequently exists, and accounts for the different results obtained by different ophthalmologists refracting the same persons. It usually disappears after presbyopia comes on, but does not always, he having found it present in a woman 73 years of age. He believes it exists most frequently in tired, irritable eyes, with corneal or lenticular astigmatism. The manner of its production can not be clearly explained, but Eaton concludes from his studies that both the ciliary and extraocular muscles play a

part in its production. He urges its practical importance, and thinks greater care should be exercised to get the eye at rest, in estimating the refraction, aiding the ordinary means, if need be, by hypodermic injections of hyoscine, and the administration of bromides or other sedatives.

EYE-STRAIN AS A FACTOR IN PRODUCING DISEASE OF THE GENERAL SYSTEM.

Frank D. W. Bates (Med. Review of Reviews, June 25, 1905) believes that eye-strain is a prominent factor in the causation of many diseases of the general system. The constant drain of nerve force necessary to see clearly in persons with ametropic eyes, or to prevent diplopia in persons with heterophoria, he believes in many cases so weakens the system that they are an easy prey to disease, which they otherwise could resist. Bright's disease, pulmonary tuberculosis, and diabetes melitus are among the diseases which he thinks may have eye-strain as an aetiologic factor in many cases. He suggests that since the nerves which supply the ciliary and extra-ocular muscles all have their origin in or near the floor of the fourth ventricle of the brain, it may be possible that the continuous stimulation of these nerves, in order to overcome the ametropia or heterophoria present in certain cases, may produce an irritation of the floor of this ventricle, and thus cause diabetes, this condition having been produced repeatedly in experiments by irritating the floor of this ventricle.

He mentions the case of a diabetic who was cured by an operation for heterophoria after having been under the care of a reputable physician four years without result; and refers to several cases, in the advanced stages of this disease, coming under his care, who, while they were not cured by wearing glasses, were benefited decidedly.

All physicians, Bates thinks, should be interested in the theory of eye-strain, and should investigate this source of trouble in all chronic and obscure cases which receive no benefit, or only temporary benefit from medicinal treatment.

THE EXTRACTION OF UNCOMPLICATED IMMATURE SENILE CATARACT.

Albert E. Bulson (Jour. Am. Med. Ass., Sept. 23, 1905) believes that as a rule a cataractous eye is an otherwise diseased eye, and hence, if the diseased process which causes the cataract be recognized early, before the lens changes are marked, these changes can often be stopped by using the proper remedies.

But if these changes can not be stopped or if the case be not seen, until after sight is so impaired that "ordinary type can no longer be read, both pleasure and business suffering from the interference," the question of operating at once, or waiting until the cataract is "ripe" becomes a very important one. Bulson does not hesitate to operate at once in such cases if there are no other contraindications. Rapidly progressing lens changes and serious involvement of the fundus he considers two such contraindications.

In his judgment the operative essentials to bring about successful results are: First, a large corneal section, embracing not less than two-fifths of the corneal circumference; second, an iridectomy with a fairly large coloboma extending to the ciliary border; third, a large opening in the capsule by two incisions at right angles to each other; fourth, gentle irrigation of the anterior chamber with a sterile normal salt solution, after the extraction of the nucleus, if much cortex remains; fifth, the early and free use of atropine; and sixth, the use of dionin, after the corneal wound has closed, to promote the resorption of lens débris.

INDIRECT INJURIES OF THE OPTIC NERVE.

J. J. Evans (British Med. Jr., July 8, 1905) reports five cases of indirect injury of the optic nerve. The sequence of events was as follows: 1. A more or less severe blow in the region of the external angular process of the frontal bone. 2. Sudden impairment of vision on the side of injury. 3. Loss of the greater part of the temporal field of vision on the same side. 4. Absence of ophthalmoscopic changes for the first few weeks, followed by atrophy of the nerve head on the injured side. 5. Central vision may be almost completely restored, but the limitation in the field of vision remains practically and permanently the same. The nature of the lesion is very problematical, but it is probably one of limited contusion of the nasal fibres of the optic nerve by *contrecoup*. The nerve on the side of the injury is driven against the inner boundary of the optic foramen. Treatment should consist of rest and quiet in a darkened room, light diet, and aperients for a further period of two or three weeks.

IS PHYSIOLOGICAL CUPPING OF THE OPTIC DISC, NOT CONFINED TO THE CENTER, EVIDENCE OF A MORBID PROCESS?

Edward J. Brown (Northwestern Lancet, July 15, 1905) found forty-five cases showing concavity of the disc out of one hundred and sixty examined. Of these forty-five cases six pre-

sented one or more symptoms of glaucoma, in addition to the cupping of the disc and contraction of the field.

From the study of his cases Brown draws the following conclusions:

1. The "physiological cup" of the optic disc is a depression at the nasal side of the center, the point of entrance of the retinal vessels. "Sometimes it is a mere dimple or it may be deepened to a considrable funnel-like hollow, the *excavation.*"

2. A concavity of the temporal or any other part of the optic disc outside the above described "physiological cup" is probably a pathological condition.

3. The fact that about 25 per cent of cases applying for correction of refractive errors, present, in recognizable degree, a concavity of the temporal quadrant of the disc, with, in most cases, a sub-normal capillary vascularity; together with the fact that about 75 per cent of that 25 per cent have definite defects in the visual fields, is a reasonable indication of the truth of Professor Schoen's theory that eye-strain through the induction of a degenerative process in the ciliary muscle, is the primary cause of glaucoma simplex.

IRITIS TUBERCULOSA AS DIAGNOSED AND TREATED BY KOCH'S TUBERCULIN.

William E. Gamble and E. V. L. Brown (Jour. Am. Med. Ass., Oct. 14, 1905) report a case of plastic iritis in a young man having enlarged glands, persistant rise of evening temperature, and slight cough, without expectoration or any discoverable pulmonary involvement, however. No bacilli were found in sputum or urine. There were five nodules found on the iris—four about the size of the head of a pin and one much larger. There was no history of syphilis, and the case got worse under the use of iodides and mercury.

He was given Koch's tuberculin, beginning with 1/50 m.g. and increased to 5 m.g. With the smaller doses they obtained decided local reactions (increased ciliary injection), which subsided after about twelve hours, and with the larger doses, conclusive temperature reactions. After six months' treatment with the tuberculin, and atropine instillations, the nodes entirely disappeared, and the eye became practically normal; vision improving from $^{20}/_{70}$ to $^{20}/_{30}$. Several months later the evening elevation of temperature ceased, and the patient had gained 8 pounds in weight, the eye remaining normal.

A review of the literature on the use of tuberculin in diseases of the eye is given.

REMOVAL OF THE LENS IN MYOPIA.

Justin L. Barnes (Med. Record, June 17, 1905) reports a case of removal of the lenses of both eyes in a girl of 16 years of age, with high myopia. Her vision before operation was—V. O. D. = $^{5}/_{200}$; w — 20 D. S. ⌒ — 1 D. C. ax 15° $^{20}/_{70}$. V. O. S. = $^{6}/_{200}$ w — 22 D. S. C. ⌒ — 1 D. C. ax 165° = $^{20}/_{70}$. After recovering from the operations V. O. D. w — 2. D. S. ⌒ — 1 D. C. ax 35° = $^{20}/_{30}$; V. O. S. w — 1 D. C. ax 180° = $^{20}/_{30}$, two and one-third times better in each eye than it was with best possible correction before operations. She reads Jaeger No. 1 at eight inches at present, with or without her nearly emmetropic glasses.

He reviews the history of this operation and notes that up to the time of writing the article, there had been about 2,500 such operations reported in Europe, while in this country there were not quite fifty.

Barnes prefers Fukala's operations, which is, free discission with linear extractions. He discusses the contradictions, advantages, dangers, justifications, and result of the operation, and concludes his article by stating that "it is generally believed that myopia and many of its attendant pathological lesions, are by such operations arrested, and subjects restored to independence."

PAMPHLETS RECEIVED.

Two Cases of Functional Strabismus. By D. B. St. J. Roosa, M. D.

A Case of Symmetrical Congenital Absence of Choroid and Retina, except in the Macular Region. By O. Landmann, M. D.

The Success which at the Present Day attends the Operation of Cataract Extraction and the Causes that Contribute to it. By S. Theobald, M. D.

Surla Filtration de l'oeil et son role dans la pathogenic du glaucoma. Rectifications á propos d'un article de critique du professeur Th. Leber. By Uribe y Troncoso, M. D.